



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,372	02/20/2004	Tetsuya Niitsuma	04097 /LH	2407
1933 7590 07/06/2007 FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708			EXAMINER YEH, EUENG NAN	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 07/06/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/783,372	Applicant(s) NIITSUMA, TETSUYA	
	Examiner Eueng-nan Yeh	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>Sep 20, 2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figure 16 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Haraguchi et al. (US 6,002,498) and Ohkawa (US 2003/0038984 A1).

Regarding claims 1, 9 and 10, Haraguchi discloses:

a plurality of image sensors having different spectral characteristics from one another (as depicted in figure 2, numeral 32 is the image reading apparatus, "spectral density is an optical density in the red wavelength region, the green wavelength region or the blue wavelength region obtained by an image reading apparatus such as a color scanner ..." at column 7, line 21. See also figure 4, which shows that sensors have different spectral characteristics from one another);

a layered image generation section for generating a plurality of pieces of layered image data on the basis of an output from the plurality of image sensors (as depicted in figure 1, numeral 26 is the color chip which is the layered image generation section "image reading apparatus 22, reads through reflected light, Y image, M image and C image and a mixed-dye image of the color chip 26 to obtain the spectral densities each image in the red, green and blue wavelength regions" at column 10, line 39);

Haraguchi discloses the formation of layered images from primary colors of the image reading apparatus.

Haraguchi does not explicitly disclose how to detect and process the document area.

Ohkawa, in the same field of endeavor of image processing ("particularly to an image processing apparatus having an erasure means by which unnecessary image

formation about an area outside the document is not conducted" in paragraph 1, line2), teaches:

a comparison section for comparing a threshold of each of the plurality of pieces of layered image data against a pixel value of each of the plurality of pieces of layered image data, the threshold being predetermined corresponding to each of the plurality of pieces of layered image data, and for judging existence of a document image on each pixel (as depicted in figure 5, label JJC is the comparison section. See also the top portion of figure 14 where the horizontal dashed line, a threshold value line THL, used to compare with each pixel along the scan line to determine the document area. "When it is the manual setting ... may select and set any one of 5 kinds of threshold levels THL (figure 9, numeral 94a) which is predetermined according to the background density" in paragraph 126, line 1);

an estimated document area determination section for determining an estimated document area of each of the plurality of pieces of layered image data on the basis of a result of judging the existence by the comparison section (as depicted in figure 5, label JJR is the estimated document area determination section. This estimation process based on said comparison section is depicted in the lower portion of figure 14);

a document area detection section for detecting a document area on the basis of the estimated document area of each of the plurality of pieces of layered image data (as depicted in figure 5, label JJM is the document area detection section. "The above result is stored in an area storing memory JJM as the area information" in paragraph 137, line 1);

Art Unit: 2624

a document reading section for reading a document on the basis of the document area detected by the document area detection section (as depicted in figure 5, label J4 is the document reading section; "The above result is stored in an area storing memory JJM ... in the gamma curve processing circuit J4, the gamma curve setting is conducted so that the outside document area NSR is not image formed ..." in paragraph 137, line 1).

Regarding claim 9, an image formation section for forming an image on the basis of image data of the document read by the document reading section (as depicted in Ohkawa figure 4, after document be read in the image processing section labeled as J, data will be transferred through data bus, labeled as B, to numeral 30 the image forming section.)

It would have been obvious at the time the invention was made to one of ordinary skill in the art to include the multiple layered image reading apparatus Haraguchi made with document area determination technique as taught by Ohkawa, in order not only to provide "more accurate outside of the document erasure function can be attained" in paragraph 14, line 9, but also to avoid "a failure in which the unnecessary image which is quite unexpected is formed on the recording material" in paragraph 13, line 7.

Regarding claim 2, the document area detection section detects an area included in any one of the estimated document area of each of the plurality of pieces of layered image data as the document area (the Haraguchi and Ohkawa combination will provide plurality of layered image data for document area detection. In light of Ohkawa's invention, this document area will include not just one particular color area but any one

Art Unit: 2624

of the estimated document area of plurality of layered image data in order to have a better coverage).

Regarding claims 3 and 11, the plurality of image sensors include a color image sensor comprising three sensors having spectral sensitivity which respectively peaks at R (red), G (green) and B (blue) ("As an image reading apparatus, it is possible to use a color image scanner wherein a color reflection original is fixed, a 5000-pixel CCD linear image sensor having on its incident light side each of B, G and R filters is provided for each of B, G and R for primary scanning ..." at Haraguchi column 20 line 56).

Regarding claims 4 and 12, the threshold of each of the plurality of pieces of layered image data is changeable ("... calculating the threshold level THL, other than the foot or valley (under peak), various character points in which the histogram data shows, can be used ..." in Ohkawa paragraph 114, line 2. See also Ohkawa figure 9, numerals 94a-94d, user can also push any button to select threshold level THL).

Regarding claim 5,
a platen on which the document is placed (as depicted in Ohkawa figure 2, numeral 11 is the platen glass. "The document S is directly placed on a platen glass 11 so that its document surface (the surface on which the image is formed) is opposite to the platen glass 11 surface" in Ohkawa paragraph 59, line 1);

a platen cover openably mounted on the platen (as depicted in Ohkawa figure 2, numeral 11C is the platen cover in the open state);

a platen cover open detection section for detecting an opened state of the platen cover (as depicted in Ohkawa figure 2, label OSS is the cover detection sensor. "the open and close condition of the cover 11C is confirmed according to the output of the cover detection sensor OSS" in Ohkawa paragraph 80, line 6);

operation of detecting the document is performed on the basis of a signal output from the platen cover open detection section (as depicted in Ohkawa figure 10, "the peak P1 generally expresses the existence of the outside document area NSR, and the peak P2 generally expresses the existence of the document area SR ... In this connection, the meaning that the platen cover is made the opened condition as described above, is seen here ..." in paragraph 93, line 1).

Regarding claim 6, an automatic threshold setting section for setting the threshold of each of the plurality of pieces of layered image data on the basis of a signal output from the plurality of image sensors in a state that the platen cover open detection section detects the opened state of the platen cover and the document is not placed on the platen (as depicted in Ohkawa figure 5, label JH is the automatic threshold setting section. As illustrated in figure 10, the peak P1 seen left in figure 10, "it is a totaled result of the luminance data value acquired according to the sky shot" in paragraph 91, line 5. "In this connection, the meaning that the platen cover is made the opened condition as described above, is seen herein. It is because the fact that sky shot is

realized ..." in paragraph 93, line 8. See also "an area in which the document exists and an area in which the document does not exist is distinguished and recognized according to the output of the image reading section on the basis of an area recognition threshold value" in Ohkawa paragraph 16, line 4).

Regarding claim 7, the estimated document area determination section determines an effective image area of each scan line on the basis of information regarding an area where not less than predetermined number of pixels which are judged as the pixel on which the document image exists by the comparison section are continuously lined up in each scan line, and determines a smallest rectangular area that includes all the effective image area of each scan line as the estimated document area (as depicted in Ohkawa figure 14, the dashed THL is a scan line along the primary scanning direction. In the middle of the scan line is the document area that is the effective image area determined after comparison section. The estimated document area is described in paragraph 135-137. As illustrated in figure 8(b), the estimated document area BL is the "minimum quadrangle including the document SI" in paragraph 132, line 4).

Regarding claim 8, the estimated document area determination section determines an effective image area of each scan line on the basis of information regarding an area where not less than predetermined number of pixels which are judged as the pixel on which the document image exists by the comparison section are

continuously lined up in each scan line, and determines an area included in both an effective area in a previous line and an effective area in a current line as the estimated document area of the current line (as depicted in Ohkawa figure 14, the dashed THL is a scan line along the primary scanning direction. In the middle of the scan line is the document area that is the effective image area determined after comparison section. The estimated document area for each scan line is described in paragraph 140-142. Each scan line after comparison "is stored in the area storing memory JJM respectively as area information" in paragraph 140, line 9. The final estimated document area SR is illustrated in figure 8(c)).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eueng-nan Yeh whose telephone number is 571-270-1586. The examiner can normally be reached on Monday-Friday 8AM-4:30PM EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 2624

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eueng-nan Yeh *E.Y.*
Assistant Patent Examiner
2624

/Brian P. Werner/

Supervisory Patent Examiner (SPE), Art Unit 2624